Q. WHAT IS THE CURRENT DLC ARCHITECTURE DEPLOYED BY VERIZON VA?

A. DLC technology was introduced in the early 1980s as a more efficient method of providing voice services to subscribers who were located at a relatively long distance from the serving central office. Voice services are considered narrowband and are limited to less than 4 kHz of bandwidth. Voice services can be efficiently sampled, converted to a digital signal, and aggregated with DLC electronics at a RT.

The planning and design basis of the DLC architecture was the establishment of geographic boundaries called "carrier serving areas" (CSA) around a central office. Each CSA contained a potential RT site where DLC equipment could serve subscribers within 9,000 to 12,000 ft. Verizon VA has deployed numerous types of DLC products in its network.

Q. CAN YOU EXPLAIN THE COMPONENTS OF DLC DESIGN?

A. Yes, referring to Exhibit ASP-7 and starting at the top right of the diagram, the copper distribution pair (also known as F2 pair) serving the end subscriber is cabled to a feeder distribution interface (FDI), which is a physical cross-connect point in the outside plant network. The FDI can also be known as the Serving Area Interface (SAI) or a Crossbox. The FDI may be near the RT or may be several thousand feet from the RT structure. The derived copper feeder pairs (shown as F1 pairs) connect the FDI to the DLC electronics located within the RT structure. The RT structure may be a cabinet, an aboveground hut or a buried

controlled environmental vault (CEV). The DLC electronics housed within this structure contain a series of line cards, which terminate one or more copper pairs serving the end users. The DLC electronics convert analog signals to digital signals and multiplexes individual subscriber traffic with other subscriber traffic onto a higher speed interface for transport to the central office. The DLC system may be fiber fed (meaning the DLC has either integrated optical transport cards or interfaces to a fiber multiplexer), or may be T1 copper fed. In the second case, the DLC system is served by one or more T1 copper facilities operating at 1.544 Mb/sec. At the central office, the narrowband traffic is routed to the central office switch via a universal or an integrated switch interface. In the case of a universal interface, the voice traffic is demultiplexed at the central office terminal (COT), converted back to analog, and routed to the voice switch via a cross-connect at the central office main distribution frame (MDF). In the case of an integrated switch interface, the voice traffic is demultiplexed (if required) and routed to a digital switch, typically at a DS1 level.

Q. WHAT IS THE PHYSICAL CABLING ARRANGEMENT BETWEEN THE REMOTE TERMINAL ELECTRONICS AND THE FEEDER DISTRIBUTION INTERFACE?

A. As shown in Exhibit ASP-8, the cable containing the derived copper feeder pairs extends from the FDI(s) to the remote terminal enclosure (RTE). This cable may contain several hundred to several thousand pairs, depending on the lines served by the RT and the FDI. Within the RTE, a splicing chamber is used to splice the outside plant cable to the cable extended from the protectors. The protectors serve

to isolate the RT electronics from lightning or other line power surges that may be introduced outside of the RT. The protectors are hardwired to the DLC electronics via connectorized cables (generally 100 pair). The connectorized cables terminate on the back plane[16] of the NGDLC electronics. RTs are pre-configured and pre-cabled prior to placement in the field due to the complexity of installing new equipment shelves, wiring and cabling once the RT is deployed.

Q. DOES THE RT PROVIDE A CROSS-CONNECT POINT LIKE A MAIN DISTRIBUTION FRAME IN A CENTRAL OFFICE?

A. No, the DLC electronics are essentially hardwired through the protectors and the splice point to the associated FDI(s) location. Hardwiring between two points in the network effectively eliminates access to individual physical pairs because the cables are connectorized (*i.e.* the cable is pre-wired with a connector and individual wires are not accessible) and bundled between the two termination points, with no intermediate access point. The RT configuration does not offer a cross-connect point like a MDF in a central office for accessing individual pairs. In addition, existing Operations Support Systems do not allow assignment of individual pairs except at the FDI.

Q. WHERE IS THE ACCESSIBLE POINT FOR THE DISTRIBUTION CABLE PAIRS?

A. In our existing loop design, the accessible point for the distribution cable pairs is at the FDI. This is the point in the outside plant network where distribution pairs

[16] The back plane is the shared circuiting of the NGDLC system connecting line card slots to other common hardware, and houses the physical cabling connections.

associated with subscribers can be physically cross-connected to copper feeder pairs extended from the remote terminal. Because the network is generally designed with a higher distribution pair count than feeder pair count, the FDI also serves as a tapering point for the copper pair network. However, once a subscriber is assigned to a DLC system, there is a one-to-one association between the copper feeder pair and the distribution pair.

Q. IS THERE A REASON WHY THE RT IS NOT EQUIPPED WITH A CROSS CONNECTION POINT?

A. Yes, an additional cross connect point at the RT would simply add additional costs and reduced network reliability and would not introduce any offsetting benefits toward the provision of service to Verizon VA's subscribers.

Q. WHAT IS "NEXT GENERATION DIGITAL LOOP CARRIER" (NGDLC)?

A. The adjective "Next Generation" DLC has been used by vendors since the 1980s to describe various improvements in DLC technology. This often-misused label has generally applied to the currently used digital loop carrier called Litespan, manufactured by Alcatel. The label "Next Generation" was first applied to this Litespan product almost ten years ago. Like computers labeled with "high speed" 386-25 MHz processors ten years ago, the use of the adjective "Next Generation" does not always reflect that our embedded base of NGDLC may not include all of tomorrow's desired functionality.

Q. PLEASE EXPLAIN THE NGDLC ARCHITECTURE THAT IS DEPLOYED IN VIRGINIA.

A. Litespan NGDLC systems became available in the late 1980s as an evolution from the older 96/192 line DLC systems. NGDLC relies on the same carrier serving area design concept as DLC, but are optimized for much higher number of subscribers at a RT by taking advantage of the larger scale circuit integration technology which became available at that time. NGDLC products are designed to be scalable and may serve as many as 2000 lines when fully configured. NGDLC products typically allow allocation of individual channel banks within the same system for either universal or integrated switch interfaces.

Q. DOES THE VIRGINIA NETWORK INCLUDE BOTH DLC AND NGDLC EQUIPMENT DESIGNS?

A. Yes, the Virginia network has evolved, like most telecommunications networks, with an ongoing introduction of different access technologies. These include first generation DLC systems that were deployed to serve 96-192 lines, and second generation DLC systems that are optimized for larger subscriber counts. In the early 1980s, the initial deployment of "pair gain" devices in Virginia consisted of first generation DLC systems supporting 96 lines. Subsequently, second generation DLC systems serving 192-672 lines were deployed in the late 1980s and early 1990s. Beginning in the mid 1990s, Lightspan NGDLC systems were deployed in Virginia to support narrowband growth requirements. At the present time, it is estimated that approximately 14.8% of the lines in Virginia are provisioned on Lightspan NGDLC equipment. Eighteen percent are installed on the first and second generation DLC.

VII. FUTURE NGDLC AND INTEGRATED ADSL

(Issues III-10, IV-28, and V-6)

Q. WHAT IS ASYNCHRONOUS DIGITAL SUBSCRIBER LINE (ADSL)?

A. ADSL is a technology that allows high-speed data services contained in the high frequencies above the 0-4000 HZ voice band spectrum to be transmitted simultaneously with the voice signal on a copper pair.

Q. DO THE VOICE TRAFFIC AND THE DATA TRAFFIC THAT SHARE THE COPPER PAIR USE SIMILAR TECHNICAL ARCHITECTURES AND TRANSPORT DESIGNS?

A. No. While they share the same copper pair, the voice and data traffic use different transport technologies. Each customer's analog voice signal is sampled at the DLC and coded into a digital bit stream that is aggregated with other customers' digitized voice signals using a Time Division Multiplexing (TDM) scheme. These TDM signals are transported and switched via a TDM compatible network architecture. This arrangement supports constant throughput for each voice channel. By contrast, each customer's digital data that is contained in high frequency ADSL signal is reconstructed at the DSLAM and assembled into Asynchronous Transfer Mode (ATM) cells. These ATM cells are aggregated with other customer's data cells and transported and switched via an ATM compatible network architecture. This arrangement supports throughput that may vary for each customer based on the amount of data the customer transmits.

Q. HOW CAN ADSL CAPABILITY BE INTEGRATED WITH NGDLC SYSTEMS?

A. Starting in the late 1990s, some NGDLC vendors began to develop integrated line cards that could perform the dual functions described above. These line cards also contain splitter devices that split the voice and data traffic and route each to the appropriate portion of the transport path, ATM vs. TDM, to the central office. Along with the line cards, vendors began to develop the necessary software upgrades to support these new cards and enable ADSL functionality as part of the NGDLC system. In some cases, new processor hardware had to be developed to support the new ADSL architecture. The use of these higher power line cards also required, in most cases, upgraded power wiring arrangements within the NGDLC system. Because narrowband services were transported over a TDM path back to the central office, vendors had to develop transport capabilities that could support transmission of ATM traffic associated with the ADSL high-speed data services. Finally, NGDLC vendors and OSS vendors had to undertake design of new OSSs, including Element Manager Systems that could manage and control the assignment, provisioning, surveillance, and maintenance of the high-speed data portion of their systems.

Q. IS VERIZON VA'S ABILITY TO INTEGRATE ADSL CAPABILITIES WITH NGDLC SYSTEMS DEPENDENT ON THE ACTIONS OF VENDORS?

A. Yes. NGDLC vendors who have developed or are developing integrated ADSL capabilities have pursued solutions that are highly dependent on their individual NGDLC architecture and design. This includes different ADSL line card counts (two, four, six lines per card), different means of transporting high-speed data

traffic to the central office (in addition to their existing narrowband transport design), and different software/hardware upgrade strategies. Also, because integrated ADSL line cards require higher power, some vendor implementations of ADSL lead to partitioning of channel banks for integrated ADSL vs. POTS only use.

Q. CAN INTEGRATION OF ADSL IMPACT EXISTING NGDLC POTS CAPACITY?

A. Yes. NGDLC line cards generally terminate four POTS lines per card. In some cases, NGDLC vendors introduced integrated voice/data line cards that terminated fewer lines per card, such as "dual" integrated line cards. Therefore, in those cases, for every line card placed in the system, the overall POTS capacity of the system is correspondingly reduced by a multiple of at least two.

Q. WHAT STEPS ARE REQUIRED TO INTEGRATE ADSL FUNCTIONALITY WITH NGDLC SYSTEMS?

A. First, the enclosure must be suitably sized and powered. Next, integrated line cards must be placed in the NGDLC channel bank shelves, and the NGDLC system must be equipped with the necessary software and hardware upgrades to support ADSL. This generally requires that a new version of software be loaded and may require the addition of new processor cards and/or other common cards required for ADSL functionality. Because the high-speed data requires additional transport capacity in the NGDLC system, ATM transport cards must be placed to support the data traffic. This may require assignment of additional fibers (if available) or transport capacity as part of a higher speed transport facility. At the

central office, an Optical Concentration Device (OCD) must be placed to provide aggregation of data traffic and routing of individual subscriber traffic to a data carrier. Finally, OSS must be capable of supporting the assignment, inventory, provisioning, surveillance, and maintenance of ADSL functionality at the RT.

Q. IN VIRGINIA, WHAT APPROACH(S) HAVE VERIZON'S NGDLC VENDORS USED FOR TRANSPORTING HIGH-SPEED DATA FROM THE REMOTE TERMINAL TO THE CENTRAL OFFICE?

A. Verizon VA's current NGDLC vendor, Alcatel, has designed its product with a separate voice and data transport architecture back to the central office. This means that voice and data traffic are carried over separate high-speed optical signals back to the central office.

Q. CAN YOU EXPLAIN THE "NGDLC WITH SEPARATE VOICE AND DATA TRANSPORT" ARCHITECTURE?

A. Yes, referring to Exhibit ASP-9, the voice and data traffic is split at the integrated line card. The voice traffic is routed to the narrowband portion of the system and transported to the central office using a time division multiplexed configuration. TDM is the traditional technology utilized by DLC systems for transport of narrowband services to the central office. In the diagram, the voice traffic is carried over the OC-3 voice portion of the system. Alternatively, the data traffic, which is formatted as ATM cells, is routed from the line card, through an ATM switching fabric, to the high-speed ATM transport portion of the system. This is referenced in the diagram as the OC-3c ATM data transport facility. At the central office, the voice traffic terminates on a COT and is routed to Verizon's

voice switch or to another carrier's collocation arrangement. The data traffic is routed to an OCD, which is an ATM switching device. The OCD performs a routing and aggregation function by terminating data traffic from one or more RTs and directing the traffic to the appropriate data carrier.

Q. HAS VERIZON DEPLOYED THE LITESPAN NGDLC ARCHITECTURE DESCRIBED ABOVE?

A. No.

Q. WILL NEW NGDLC THAT IS DEPLOYED IN VIRGINIA HAVE THE DUAL FUNCTIONALITY DESCRIBED ABOVE?

A. Not at this time. As POTS growth triggers feeder relief that will require the installation of new DLC, Verizon VA will purchase and design new NGDLC systems that are capable of supporting only POTS services. The new installations, however, will be built with space that would allow upgrading the remote terminal components, as part of a ATM packet network, if Verizon VA decides to make that investment in the future. Verizon VA has not installed these NGDLC systems with the electronics that support the ATM packet functionality, now has it installed any OCDs or packet switches with which these systems would communicate.

Q. FOR EXISTING NGDLC SYSTEMS DEPLOYED IN THE VIRGINIA NETWORK, ARE THERE ADDITIONAL ADSL INTEGRATION ISSUES TO BE CONSIDERED?

A. Yes, the Virginia network currently has numerous types of DLC systems deployed. Of this list, only a small number of DLC product types are considered to be potentially upgradeable to support ADSL. Of this number of potentially upgradeable systems, a site-by-site review of remote terminal locations must be conducted to assure that proper system capacity; fiber capacity, power, heating, and ventilation requirements can be met. In the case of the Alcatel LitespanÒ 2000 system, Verizon has determined that integration of ADSL capability can only be reasonably accomplished through the dedication of a separate channel bank shelf for integrated line cards. In addition, spare fiber and transport capacity may not exist at all RT locations. Because integrated line cards have higher power requirements, upgrades to existing power wiring at the RT may also be required. If the RT structure is not equipped with sufficient heat exchanger apparatus, the RT cannot support the higher heat dissipation requirements associated with ADSL line cards. Even assuming that these requirements can be met at a specific RT location, the resulting "cost to upgrade" must be assessed on a RT-by-RT basis.

VIII. VERIZON VA'S PROPOSAL FOR PROVIDING ACCESS TO HFPL FOR FIBER FED LOOPS

(Issues III-10, IV-28, and V-6)

Q. HAVE AT&T AND WORLDCOM PROPOSED INTERCONNECTION AGREEMENT PROVISIONS THAT REQUIRE VERIZON VA TO PROVIDE INTEGRATED DSLAM FUNCTIONALITY AT THE RT AND DSL TRANSPORT OVER FIBER FEEDER (I.E., "DSL OVER FIBER")?

A. Yes. Despite the fact that neither this capability nor the necessary OSS currently exist in Verizon VA's network, both AT&T and WorldCom have proposed extensive terms and conditions addressing this issue. As discussed below, their language goes beyond the requirements of the Act and the Commission and ignores the necessity to evaluate all technical and operational issues surrounding their proposals.

Q. PLEASE SUMMARIZE VERIZON VA'S CONCERNS ABOUT INCLUDING SUCH PROVISIONS IN ITS INTERCONNECTION AGREEMENTS WITH AT&T AND WORLDCOM?

A. First, the numerous operational and technical issues associated with providing access to the HFPL for fiber fed RTs are under active investigation by the Commission in a Further Notice of Proposed Rulemaking (FNPR).[17] AT&T and MCI's request for integrated DSLAM functionality at the RT and DSL transport over fiber feeder (*i.e.*, "DSL over fiber") represents just one possible solution under discussion in that proceeding. The FNPR should therefore be completed before this issue is decided in this proceeding or in any state-specific arbitration. This approach would allow the most efficient use of the parties' resources. An arbitration in one state jurisdiction among a very limited set of the total number of interested parties is not the appropriate venue for resolving these issues that affect all jurisdictions and many additional parties.

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[17] *See Deployment of Wireline Services Offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, Third Report and Order on Reconsideration in CC Docket No. 98-147, Fourth Report and Order on Reconsideration in CC Docket 96-98, FCC 01-26, Third Further Notice of Proposed Rulemaking in CC Docket No. 98-147, and Sixth Further Notice of Proposed Rulemaking in CC Docket No. 96-98. (Released January 19, 2001) (*Line Sharing Reconsideration Order).*

Second, as discussed below, MCI's and AT&T's request for integrated DSLAM functionality at the RT and DSL transport over fiber feeder (*i.e.*, "DSL over fiber") is unnecessary. Verizon VA's proposed interconnection agreements provide the means for AT&T and WorldCom to access the HFPL where fiber has been deployed in a manner that comports with Verizon VA's current legal obligations.

Q. DO THE COMMISSION'S REGULATIONS REGARDING THE STATUS OF PACKET SWITCHING AS A UNE PROVIDE A BASIS FOR INCLUDING AT&T'S OR MCI'S LANGUAGE FOR INTEGRATED DSLAM FUNCTIONALITY AT THE RT AND DSL TRANSPORT OVER FIBER FEEDER (I.E., "DSL OVER FIBER") IN THE AGREEMENT?

A. No. The *UNE Remand Order* identifies four conditions that all must be satisfied in order for packet switching (*e.g.*, an integrated DSLAM functionality at the RT) to be considered a UNE. In rough paraphrase, those conditions are: (1) the ILEC has deployed DLC; (2) there is no spare copper available; (3) the ILEC does not permit DSLAMs to be deployed at sub-loop interconnection points; ***and*** (4) the ILEC has deployed packet switching capability for the ILEC's own use. Verizon VA's interconnection agreements permit customers to deploy DSLAMs at sub-loop interconnection points, ***and*** Verizon VA has not deployed packet switching capability for its own use. Thus, the last two of the conditions are not satisfied, and packet switching may not be considered to be a UNE.

Q. HOW DOES VERIZON VA'S PROPOSED CONTRACT LANGUAGE PROVIDE ACCESS TO THE HFPL WHERE FIBER HAS BEEN DEPLOYED?

A. Verizon VA has identified two currently available alternatives: (1) line and station transfers; and (2) sub-loop interconnection. Consequently, Verizon VA's proposed agreements permit AT&T and WorldCom to access the HFPL of a loop served by DLC equipment by deploying a Telephone Outside Plant Interconnection Cabinet (TOPIC) at or near the FDI "accessible terminal" that connects Verizon VA's copper distribution to Verizon VA's DLC supported feeder, and then by purchasing a sub-loop feeder element to transport the data signal back to the central office. AT&T and WorldCom may also use their own facilities or those of a third party to transport the data over a network separate from Verizon VA's. Finally, they may place their own DSLAM or other equipment at or near the RT to connect the fiber feeder or copper distribution plant.[18] Thus, Verizon VA's proposed language satisfies its requirements under Commission rules.[19]

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[18] Subject to the availability of space, Verizon VA allows the collocation of AT&T or WorldCom's DSLAM inside Verizon VA's RTs. *See* Verizon-proposed interconnection agreement to AT&T §§ 11.2.14.6.14 and 13.6 and Verizon-proposed interconnection agreement to WorldCom § 5.13 of the UNE Attachment. *See* Verizon-proposed interconnection agreement to AT&T § 11.2.14.7 and Verizon-proposed agreement to WorldCom § 5 of the UNE Attachment for access to feeder sub-loops.

[19] *See Line Sharing Reconsideration Order* at ¶ 12 (clarifying that "where a competitive LEC has collocated a DSLAM at the remote terminal, an incumbent LEC must enable the competitive LEC to transit traffic from the remote terminal to the central office. The incumbent LEC can do this, at a minimum, by leasing access to the dark fiber element or by leasing access to the sub-loop element.

A. LINE AND STATION TRANSFERS

Q. PLEASE DESCRIBE VERIZON VA'S POSITION ON LINE AND STATION TRANSFERS IN ORDER TO FREE UP COPPER FACILITIES?

A. Verizon VA performs line and station transfers in its provisioning process when copper facilities must be found to accommodate a copper based advanced service. Line and station transfers involve the move of a customer's service from one existing loop facility onto another existing loop facility serving the same location. This is done where suitable facilities exist, at the discretion of Verizon VA. Verizon VA will perform a line and station transfer of a loop from fiber to qualified copper on the CLEC's behalf, provided that such transfers do not impair the service of any third parties. Costs associated with line and station transfers are recovered via a non-recurring charge (a set fee) and will be billed to the cost-causer.

B. SUB-LOOP ACCESS TO THE HFPL ON LOOPS SERVED BY FIBER

Q. HOW DOES VERIZON VA'S PROPOSED INTERCONNECTION AGREEMENT PROVIDE AT&T AND WORLDCOM WITH THE ABILITY TO PROVIDE ADVANCED SERVICES TO AN END USER SERVED BY FIBER-FED DLC USING SUB-LOOP ARRANGEMENTS?

A. As depicted in Exhibit ASP-10, AT&T and WorldCom can gain access to the high frequency portion of Verizon VA's copper distribution facilities by establishing an interconnect arrangement at the Verizon VA FDI cabinet. This scenario is outlined in Verizon's proposed interconnection agreement to AT&T at

§ 11.2.14.6.3 and Verizon's proposed interconnection agreement to WorldCom at § 5.3 of the UNE Attachment.

Q. HOW DOES A CLEC REQUEST THE ESTABLISHMENT OF AN INTERCONNECT ARRANGEMENT AT THE VERIZON VA FDI?

A. The requesting CLEC is required to submit a Sub-loop Interconnect Application to its Verizon Account Manager. The Verizon Account Manager will forward the request to the appropriate departments to be assessed for the availability of space if remote terminal collocation is desired for available terminal blocks, technical feasibility, estimated installation time frame, and to provide costs for the necessary work performed by Verizon VA to establish the interconnect arrangement.

Q. WILL THE WORK PERFORMED BY VERIZON VA TO ESTABLISH A SUB-LOOP INTERCONNECT ARRANGEMENT AT THE VERIZON VA FDI ALWAYS BE THE SAME?

A. No. Each provisioning scenario will be unique and fact specific.

Q. WHAT ARE THE RESPONSIBILITIES OF THE REQUESTING CLEC IN ESTABLISHING THE SUB-LOOP INTERCONNECT ARRANGEMENT?

A. The requesting CLEC will be responsible for securing any necessary right-of-ways and/or zoning from the local municipality. The CLEC will also be responsible for providing any power, trenching, conduit, a terminal block to be used as a point of demarcation, and any supporting structure necessary to complete its portion of the sub-loop interconnect arrangement.

Q. WHAT ARE VERIZON VA'S RESPONSIBILITIES IN ESTABLISHING THE SUB-LOOP INTERCONNECT ARRANGEMENT?

A. Verizon VA will modify the Verizon FDI for the appropriate amount of cross-connect facilities, if necessary, to accommodate the sub-loop interconnect arrangement. Verizon VA will also place the interconnect cable between the Verizon VA FDI and the terminal block (point of demarcation) supplied by the requesting CLEC. Verizon VA will be responsible for maintenance of the interconnect cable on a going forward basis.

Q. DOES VERIZON VA PROVIDE SPLITTER FUNCTIONALITY WITH THIS LINE SHARING UNBUNDLED SUB-LOOP ARRANGEMENT?

A. No. It will be up to the CLEC to provide its own splitter arrangement.

Q. WHAT OPTIONS ARE AVAILABLE TO THE CLEC FOR PLACEMENT OF ITS DSLAM EQUIPMENT?

A. The CLEC may place its DSLAM adjacent to the Verizon VA's FDI on the CLEC's side of the demarcation point of the sub-loop interconnection arrangement. The CLEC may also choose to collocate its DSLAM within a Verizon VA RT, if space is currently available and it is technically feasible. Finally, the CLEC may choose to place its equipment on an adjacent or near by property.

Q. HOW DOES A CLEC REQUEST THE USE OF THE HIGH FREQUENCY PORTION OF THE SUB-LOOP DISTRIBUTION FACILITY AFTER THE INTERCONNECT ARRANGEMENT HAS BEEN ESTABLISHED?

A. The CLEC will submit a local service request (LSR) to request the utilization of the high frequency portion of Verizon VA's sub-loop distribution facilities. In order to meet the definition of line sharing, there must be an existing Verizon VA Retail POTS customer on the loop facility in order for the LSR to be deemed valid.

Q. WHAT WORK HAS TO BE PERFORMED BY VERIZON VA IN ORDER TO REARRANGE THE FACILITIES TO ACCOMMODATE THE LINE SHARING UNBUNDLED SUB-LOOP ARRANGEMENT?

A. Verizon VA will need to dispatch a technician to run jumpers to re-route both the voice and data usage originating from the end-user customer over to the CLEC's portion of the sub-loop interconnect arrangement. The Verizon VA technician will also need to run a second set of jumpers to route the POTS usage from the CLEC to the switch in Verizon VA's central office (*see* Exhibit ASP-10).

Q. WHAT WORK MUST THE CLEC PERFORM TO ACCOMMODATE THE LINE SHARING UNBUNDLED SUB-LOOP ARRANGEMENT?

A. The CLEC will need to run a set of jumpers routing the data usage to its DSLAM equipment. The CLEC will also need to run a second set of jumpers to route the POTS usage back to the Verizon VA FDI (see Exhibit ASP-10).

Q. WHAT OPTIONS ARE AVAILABLE TO THE CLEC FOR TRANSPORT OF THE DATA USAGE?

A. The CLEC has the option of providing its own transport facilities, using transport from a third party provider, or leasing an unbundled feeder facility or dark fiber, if

available, from Verizon VA (assuming the CLEC has a collocation arrangement in the Verizon VA central office).

IX. CLEC FURNISHED LINE CARD OPTION (A/K/A "LINE CARD" OR "PLUG AND PLAY" COLLOCATION)

(Issues III-10, IV-28, and V-6)

Q. WHAT IS A LINE CARD?

A. A line card (also known as a channel card) is a circuit pack that can be inserted in the channel bank. As used by AT&T and WorldCom, the line card would be inserted at the field end of the NGDLC system. Facing the customer, the card typically terminates two, four, or six end user copper pairs and performs service specific functions. Facing the network, the card works in conjunction with the system software and common cards in the DLC channel bank and provides an interface to the higher speed multiplexing and transport cards in the DLC channel bank.

Q. SHOULD AT&T OR WORLDCOM BE ENTITLED TO FURNISH A LINE CARD AT THE NGDLC RT UNDER EITHER AN ALLEGED PHYSICAL OR VIRTUAL "COLLOCATION" ARRANGEMENT (SEE WORLDCOM LANGUAGE AT 4.9.4.4.2)?

A. No. The option for a CLEC provided line card (a) cannot be required by the Act; (b) would be economically wasteful, inefficient, and not in the public interest; and (c) would not produce any of the alleged benefits claimed for what CLECs call "line card collocation."